

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES
MISSOURI CLEAN WATER COMMISSION



MISSOURI STATE OPERATING PERMIT

In compliance with the Missouri Clean Water Law, (Chapter 644 R.S. Mo. as amended, hereinafter, the Law), and the Federal Water Pollution Control Act (Public Law 92-500, 92nd Congress) as amended,

Permit No. MO-0000035

Owner: River Cement Co. D/B/A Buzzi Unicem USA, Inc.
Address: 1000 River Cement Road Festus, MO. 63028

Continuing Authority: Same as above
Address: Same as above

Facility Name: River Cement Co. D/B/A Buzzi Unicem USA, Inc.
Facility Address: 1000 River Cement Road Festus, MO. 63028

Legal Description: SEE PAGES 2, 3 & 4
UTM Coordinates: SEE PAGES 2, 3 & 4

Receiving Stream: SEE PAGES 2, 3 & 4
First Classified Stream and ID: SEE PAGES 2, 3 & 4
USGS Basin & Sub-watershed No.: SEE PAGES 2, 3 & 4

is authorized to discharge from the facility described herein, in accordance with the effluent limitations and monitoring requirements as set forth herein:

FACILITY DESCRIPTION

SEE PAGES 2, 3 & 4

This permit authorizes only wastewater discharges under the Missouri Clean Water Law and the National Pollutant Discharge Elimination System; it does not apply to other regulated areas. This permit may be appealed in accordance with Section 644.051.6 of the Law.

February 1, 2013 April 10, 2013
Effective Date Modification Date


Sara Parker Pauley, Director, Department of Natural Resources

June 30, 2017
Expiration Date


John Madros, Director, Water Protection Program

FACILITY DESCRIPTION (continued):

Outfall #001-Industry (Cement) -SIC #3241

This outfall is non-contact cooling water and Stormwater runoff from plant area.

Design flow is 4.1MGD.

Actual flow is 2.9 MGD.

Legal Description: NW ¼, NE ¼, SE ¼, Sec 22, T40N, R 6E, Jefferson County.

UTM Coordinates: X = 733260, Y = 4229003

Receiving Stream: Cliffdale Hollow Creek (U)

First Classified Stream and ID: Mississippi River (P) (1707.02)

USGS Basin & Sub-watershed No.: (07140101 – 0904)

Outfall #002- Industry (Cement)-SIC #3241

This outfall is non-contact cooling water, treated sanitary wastewater directed from outfall #011, compressor condensate, mobile Equipment washing and stormwater runoff from the plant area.

Design flow is 4.1 MGD.

Actual flow is 2.1 MGD.

Legal Description: NE ¼, NE ¼, SE ¼, Sec 22, T40N, R6E, Jefferson County

UTM Coordinates: X = 733361, Y = 4228972

Receiving Stream: Cliffdale Hollow Creek (U)

First Classified Stream and ID: Mississippi River (P) (1707.02)

USGS Basin & Sub-watershed No.: (07140101 – 0904)

Outfall #003- Industry (Cement)-SIC #3241

This outfall is generated from Mississippi water intake screen backwash.

Design flow is 0.005 MGD

Actual flow is 0.004 MGD.

Legal Description: NE ¼, NE ¼, SE ¼, Sec 22, T40N, R6E, Jefferson County

UTM Coordinates: X = 733396, Y = 4228956

Receiving Stream: Cliffdale Hollow Creek (U)

First Classified Stream and ID: Mississippi River (P) (1707.02)

USGS Basin & Sub-watershed No.: (07140101 – 0904)

Outfall #007- Industry (Cement)-SIC #3241

This outfall is non-contact cooling water, compressor condensate, and stormwater runoff from the plant area.

Design flow is 1.2 MGD

Actual flow is 0.70 MGD.

Legal Description: NW ¼, NW ¼, SE ¼, Sec 22, T40N, R6E, Jefferson County

UTM Coordinates: X = 733076, Y = 4228947

Receiving Stream: Cliffdale Hollow Creek (U)

First Classified Stream and ID: Mississippi River (P) (1707.02)

USGS Basin & Sub-watershed No.: (07140101 – 0904)

Outfall #010- Industry (Cement)-SIC #3241

This outfall is non-contact cooling water, and stormwater runoff from the north quarry.

Design flow is 0.90 MGD

Actual flow is 0.40 MGD.

Legal Description: NE ¼, SW ¼, NW ¼, Sec 23, T40N, R6E, Jefferson County

UTM Coordinates: X = 733830, Y = 4229408

Receiving Stream: Cliffdale Hollow Creek (U)

First Classified Stream and ID: Mississippi River (P) (1707.02)

USGS Basin & Sub-watershed No.: (07140101 – 0904)

FACILITY DESCRIPTION (continued):

Outfall #011- Sanitary wastewater-SIC #4952

Extended aeration/aerobic digester/ sludge is removed by a contract hauler.

Design population equivalent is 124.

Design flow is 0.02 MGD.

Actual flow is 0.006 MGD.

Design sludge production is 2.2 dry tons/year

Legal Description: SE ¼, SE ¼, NE ¼, Sec 22, T40N, R6E, Jefferson County

UTM Coordinates: X = 733480, Y = 4229141

Receiving Stream: Cliffdale Hollow Creek (U)

First Classified Stream and ID: Mississippi River (P) (1707.02)

USGS Basin & Sub-watershed No.: (07140101 – 0904)

Outfall #012-Industry (Cement) -SIC #3241

This outfall is Stormwater runoff from coke area.

Design flow is estimated to be 0.26 MGD.

Legal Description: SW ¼, NW ¼, Sec 23, T40N, R 6E, Jefferson County

UTM Coordinates: X = 733736, Y = 4229300

Receiving Stream: Cliffdale Hollow Creek (U)

First Classified Stream and ID: Mississippi River (P) (1707.02)

USGS Basin & Sub-watershed No.: (07140101 – 0904)

Outfall #013-Industry (Quarry) -SIC #1422

This outfall is Stormwater runoff from retention area south quarry.

Design flow is estimated to be 4.80 MGD.

Actual flow is 0.22 MGD.

Legal Description: NE ¼, NE ¼, SW ¼, Sec 23, T40N, R 6E, Jefferson County

UTM Coordinates: X = 734212, Y = 4229125

Receiving Stream: Unnamed tributary to Mississippi River (U)

First Classified Stream and ID: Mississippi River (P) (1707.02)

USGS Basin & Sub-watershed No.: (07140101 – 0904)

Outfall #014-Industry (Quarry) -SIC #1422

This outfall is Stormwater runoff from south quarry.

Design flow is estimated to be 0.78 MGD.

Legal Description: NE ¼, SW ¼, SE ¼, Sec 23, T40N, R 6E, Jefferson County

UTM Coordinates: X = 734703, Y = 4228699

Receiving Stream: Unnamed tributary to Mississippi River (U)

First Classified Stream and ID: Mississippi River (P) (1707.02)

USGS Basin & Sub-watershed No.: (07140101 – 0904)

Outfall #015-Industry (Cement) -SIC #3241

This outfall is Stormwater runoff from plant access road and north quarry road.

Design flow is estimated to be 0.16 MGD.

Legal Description: SW ¼, NW ¼, Sec 23, T40N, R 6E, Jefferson County

UTM Coordinates: X = 733677, Y = 4229245

Receiving Stream: Cliffdale Hollow (U)

First Classified Stream and ID: Mississippi River (P) (1707.02)

USGS Basin & Sub-watershed No.: (07140101 – 0904)

Outfall #016-Industry (Cement) -SIC #4491

This outfall is Stormwater runoff from Mississippi River loading area.

Design flow is estimated to be 0.03 MGD.

Legal Description: NW ¼, NW ¼, Sec 23, T40N, R 6E, Jefferson County

UTM Coordinates: X = 733527, Y = 4229881

Receiving Stream: Unnamed Tributary to Mississippi River (U)

First Classified Stream and ID: Mississippi River (P) (1707.02)

USGS Basin & Sub-watershed No.: (07140101 – 0904)

FACILITY DESCRIPTION (continued):

Outfall #017-Industry (Cement) -SIC #3241

This outfall is Stormwater runoff from storage area.

Design flow is estimated to be 0.16 MGD.

Actual flow is 0.011 MGD.

Legal Description: SW ¼, NW ¼, Sec 23, T40N, R 6E, Jefferson County

UTM Coordinates: X = 733634, Y = 4229212

Receiving Stream: Cliffdale Hollow Creek (U)

First Classified Stream and ID: Mississippi River (P) (1707.02)

USGS Basin & Sub-watershed No.: (07140101 – 0904)

Outfall #021-Industry (Quarry) -SIC #1422

This outfall is Stormwater runoff from retention area south quarry.

Design flow is estimated to be 0.09 MGD.

Actual flow is 0.005 MGD.

Legal Description: SW ¼, NW ¼, Sec 23, T40N, R 6E, Jefferson County

UTM Coordinates: X = 733690, Y = 4229219

Receiving Stream: Cliffdale Hollow Creek (U)

First Classified Stream and ID: Mississippi River (P) (1707.02)

USGS Basin & Sub-watershed No.: (07140101 – 0904)

**The following outfalls are inactive #004, #005, #006, #008, #009, #018, #019 & #020.
For some of these outfalls no flow was reported due to no-discharge.**

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

PAGE NUMBER 5 of 13

PERMIT NUMBER MO-0000035

The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective upon issuance and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
<u>Outfalls #001, #002, #007, & #010</u>						
Flow	MGD	*		*	once/month	24 hr. estimate
Temperature	°F	*****		*****	once/quarter**	grab
Oil & Grease	mg/L	15		10	once/quarter**	grab
Total Suspended Solids	mg/L	80		60	once/quarter**	grab
pH – Units	SU	6.5-9.0		6.5-9.0	once/quarter**	grab
Total Chlorine Residual (Note 2)	ug/L	17.0 (ML)		8.0 (ML)	twice/year***	grab
Endothall, Mono(N,N- dimethylecocoamine)salt	mg/L	*		*	*****	grab

MONITORING REPORTS SHALL BE SUBMITTED **QUARTERLY**; THE FIRST REPORT IS DUE **APRIL 28, 2013**. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.

B. STANDARD CONDITIONS

IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED Part I STANDARD CONDITIONS DATED October 1, 1980 and August 15, 1994, AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

PAGE NUMBER 6 of 13

PERMIT NUMBER MO-0000035

The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective upon issuance and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
<u>Outfalls #003, #012, #013, #014, #015, #016, #017 & #021</u>						
Flow	MGD	*		*	once/month	24 hr. estimate
Total Suspended Solids	mg/L	80		60	once/quarter**	grab
Settleable Solids	ml/L/hr	1.5		1.0	once/quarter**	grab
Oil & Grease	mg/L	15		10	once/quarter**	grab
pH – Units	SU	6.5-9.0		6.5-9.0	once/quarter**	grab
Total Chlorine Residual(Note 2)	ug/L	*		*	twice/year****	grab

MONITORING REPORTS SHALL BE SUBMITTED **QUARTERLY** THE FIRST REPORT IS DUE **APRIL 28, 2013**. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.

B. STANDARD CONDITIONS

IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED Part I STANDARD CONDITIONS DATED October 1, 1980 and August 15, 1994, AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

PAGE NUMBER 7 of 13

PERMIT NUMBER MO-0000035

The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The interim effluent limitations shall become effective upon issuance and remain in effect until **September 14, 2014**. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	INTERIM EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
<u>Outfall #011</u>						
Flow	MGD	*		*	once/month	24 hr. Est.
Biochemical Oxygen Demand ₅ ****	mg/L		45	30	once/quarter**	24 hr. comp.
Total Suspended Solids****	mg/L		45	30	once/quarter**	24 hr. comp.
<i>E. coli</i> (Note 1)	#/100 mL	*		*	once/quarter**	grab
Total Chlorine Residual(Note 2)	ug/L	*		*	once/quarter**	grab
pH – Units	SU	6.5-9.0		6.5-9.0	once/quarter**	grab
Ammonia as N (April 1 – Sept 30) (Oct 1 – March 31)	mg/L	3.7		1.4	once/quarter**	grab
		7.5		2.8	once/quarter**	grab

MONITORING REPORTS SHALL BE SUBMITTED **QUARTERLY**; THE FIRST REPORT IS DUE **APRIL 28, 2013**. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.

B. STANDARD CONDITIONS

IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED Part I STANDARD CONDITIONS DATED October 1, 1980 and August 15, 1994, AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.

The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective **September 15, 2014** and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
<u>Outfall #011</u>						
Flow	MGD	*		*	once/month	24 hr. Est.
Biochemical Oxygen Demand ₅ ****	mg/L		45	30	once/quarter**	24 hr. comp.
Total Suspended Solids****	mg/L		45	30	once/quarter**	24 hr. comp.
<i>E. coli</i> (Note 1)	#/100 mL	1030		206	once/quarter**	grab
Total Chlorine residual (Note 2)	ug/L	17.0 (ML)		8.0 (ML)	once/quarter**	grab
pH – Units	SU	6.5-9.0		6.5-9.0	once/quarter**	grab
Ammonia as N (April 1 – Sept 30)	mg/L	3.7		1.4	once/quarter**	grab
(Oct 1 – March 31)		7.5		2.8	once/quarter**	grab

MONITORING REPORTS SHALL BE SUBMITTED **QUARTERLY**; THE FIRST REPORT IS DUE **JANUARY 28, 2015**. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.

B. STANDARD CONDITIONS

IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED Part I STANDARD CONDITIONS DATED October 1, 1980 and August 15, 1994, AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

- * Monitoring requirement only.
- ** Sample once per quarter, See Table Below.

Sample discharge at least once for the months of:	Report is due:
January, February, March (1st Quarter)	April 28
April, May, June (2nd Quarter)	July 28
July, August, September (3rd Quarter)	October 28
October, November, December (4th Quarter)	January 28

- *** Sample twice a year in the month of April and September.
- **** A 24-hour composite sample is composed of 48 (subsamples) collected at 30 minute intervals by an automatic sampling device.
- ***** Monitoring only after each application of Endothall.
- ***** The effluent shall not elevate or lower temperature of the receiving stream more than 5 °F. The receiving stream temperature shall not exceed 90 °F due to the effluent. Stream temperatures 100 foot above and 100 foot below each outfall shall be reported.

Note 1 - Final limitations and monitoring requirements for *E. coli* are applicable only during the recreational season from April 1 through October 31.

Note 2 - This permit contains a Total Residual Chlorine (TRC) limit.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

- (a) This effluent limit is below the minimum quantification level (ML) of the most common and practical EPA approved CLTRC methods. The Department has determined the current acceptable ML for total residual chlorine to be 130µg/L when using the DPD Colorimetric Method #4500 – CL G. from Standard Methods for the Examination of Waters and Wastewater. The permittee will conduct analyses in accordance with this method, or equivalent, and report actual analytical values. Measured values greater than or equal to the minimum quantification level of 130 µg/L will be considered violations of the permit and values less than the minimum quantification level of 130 µg/L will be considered to be in compliance with the permit limitation. The minimum quantification level does not authorize the discharge of chlorine in excess of the effluent limits stated in the permit.
- (b) Disinfection is required year-round unless the permit specifically states that “Final limitations and monitoring requirements for *E. coli* are applicable only during the recreational season from April 1 through October 31.” If your permit does not require disinfection during the non-recreational months, do not chlorinate in those months.
- (c) Do not chemically dechlorinate **if it is not needed to meet the limits in your permit**.
- (d) If no chlorine was used in a given sampling period, an actual analysis is not necessary. Simply report as “0 µg/L” TRC.

C. SPECIAL CONDITIONS

1. This permit may be reopened and modified, or alternatively revoked and reissued, to:
 - (a) Comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a) (2) of the Clean Water Act, if the effluent standard or limitation so issued or approved:
 - (1) contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or
 - (2) controls any pollutant not limited in the permit.
 - (b) Incorporate new or modified effluent limitations or other conditions, if the result of a waste load allocation study, toxicity test or other information indicates changes are necessary to assure compliance with Missouri's Water Quality Standards.
 - (c) Incorporate new or modified effluent limitations or other conditions if, as the result of a watershed analysis, a Total Maximum Daily Load (TMDL) limitation is developed for the receiving waters which are currently included in Missouri's list of waters of the state not fully achieving the state's water quality standards, also called the 303(d) list.

The permit as modified or reissued under this paragraph shall also contain any other requirements of the Clean Water Act then applicable.
2. All outfalls must be clearly marked in the field.
3. Water Quality Standards
 - (a) Discharges to waters of the state shall not cause a violation of water quality standards rule under 10 CSR 20-7.031, including both specific and general criteria.
 - (b) General Criteria. The following general water quality criteria shall be applicable to all waters of the state at all times including mixing zones. No water contaminant, by itself or in combination with other substances, shall prevent the waters of the state from meeting the following conditions:
 - (1) Waters shall be free from substances in sufficient amounts to cause the formation of putrescent, unsightly or harmful bottom deposits or prevent full maintenance of beneficial uses;
 - (2) Waters shall be free from oil, scum and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses;
 - (3) Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor or prevent full maintenance of beneficial uses;
 - (4) Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life;
 - (5) There shall be no significant human health hazard from incidental contact with the water;
 - (6) There shall be no acute toxicity to livestock or wildlife watering;
 - (7) Waters shall be free from physical, chemical or hydrologic changes that would impair the natural biological community;
 - (8) Waters shall be free from used tires, car bodies, appliances, demolition debris, used vehicles or equipment and Solid waste as defined in Missouri's Solid Waste Law, section 260.200, RSMo, except as the use of such
4. Changes in Discharges of Toxic Substances

The permittee shall notify the Director as soon as it knows or has reason to believe:

 - (a) That any activity has occurred or will occur which would result in the discharge of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels:"
 - (1) One hundred micrograms per liter (100 µg/L);
 - (2) Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/L) for 2,5 dinitrophenol and for 2-methyl-4, 6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;
 - (3) Five (5) times the maximum concentration value reported for the pollutant in the permit application;
 - (4) The level established in Part A of the permit by the Director.
 - (b) That they have begun or expect to begin to use or manufacture as an intermediate or final product or byproduct any toxic pollutant, which was not reported in the permit application.
5. Report as no-discharge when a discharge does not occur during the report period.
6. It is a violation of the Missouri Clean Water Law to fail to pay fees associated with this permit (644.055 RSMo).
7. This permit does not authorize mining activity, only water discharges that result from mining activity. A permit authorizing mining activities must be obtained from the Land Reclamation Program.

C. SPECIAL CONDITIONS (continued)

8. This permit does not authorize discharges of waste material, such as concrete and water from washing of concrete delivery trucks, into waters of the state. This permit does not authorize discharges to waters of the state from any location other than the outfalls described on page one of this permit. Waste concrete from delivery trucks shall be washed into a dedicated shallow depression or other device designed to capture the concrete and allow it to dry. Washing waste concrete into waters of the state or in a location where it is likely to enter waters of the state, such as a drainage ditch, is prohibited by State Law and Regulations (644.051 RSMo, 10 CSR 20-6.010).
9. Non-stormwater discharges are those caused by something other than storm water runoff and include mine pit dewatering, vehicle and equipment wash water and all dry-weather discharges from processing plants. This permit does not authorize the discharge of waters with added detergents, acids, caustics, solvents, or other additives.
10. Stormwater samples shall be collected within the first 60 minutes of storm events of 0.1 inches or greater, that result in a discharge. Storm events include rainfall as well as run-off from the melting of frozen precipitation. If a discharge does not occur during the reporting period, the permittee shall submit a report of no discharge to the Department. All outfalls must be clearly marked in the field.
11. Permittee shall provide sediment and erosion control sufficient to prevent pollution to waters of the state and comply with the effluent limitations and other permit conditions. This may require the construction of properly designed sediment basins or other treatment structures. The permittee shall not allow mined material or overburden to enter waters of the state.
12. If vehicle or equipment washing/rinsing is conducted at the facility or other similar process wastewater is generated, permittee shall treat the resulting wastewater prior to discharge to waters of the state in order to meet the effluent limitations and other permit conditions.
13. If dumping or disposal of waste concrete, waste sand, waste asphalt, waste clay or glass products, or waste rock is conducted at the facility, permittee shall prevent the material from entering waters of the state. Any resulting wastewater or leachate from these activities must be treated prior to discharge. Discharging these materials into waters of the state during off site activities is also prohibited.
14. Permittee shall prevent the spillage or loss of fluids, oil, grease, fuel, etc. from vehicle maintenance, equipment maintenance, or warehousing activities and thereby prevent the contamination of storm water from these substances.
15. Permittee shall provide collection facilities and arrange for proper disposal of waste products including but not limited to petroleum waste products, and solvents.
16. Permittee shall store all paint, solvents, petroleum products, petroleum waste products, and storage containers (such as drums, cans, or cartons) so that these materials are not exposed to storm water, or provide other prescribed BMP's such as plastic lids, portable spill pans or containment to prevent the commingling of storm water with container contents. Commingled water may not be discharged under this permit. Permittee shall provide spill prevention, control, and/or management sufficient to prevent any spills of these pollutants from entering waters of the state. Any containment system used to implement this requirement shall be constructed of materials compatible with the substances contained and shall also prevent the contamination of groundwater.
17. Permittee shall designate an individual as responsible for environmental matters at the facility who will serve as a contact for the Department. Permittee shall notify the Department in writing of a personnel change for this position. One individual may be the contact for multiple facilities so long as that person can effectively communicate with the Department on every facility.
18. Permittee shall maintain records of all pumped discharges that enter surface waters of the state. These records must include an estimate of the volume, the date and time(s), and the location of each discharge.
19. Permittee shall provide for inspection by facility staff, at least once per month, of all storm water pollution prevention structures, storm water and wastewater treatment structures, and of the facility in general to ensure that structures are properly maintained and effective, and that any Best Management Practices are continually implemented and effective. Inspections must be documented in the form of a written report or checklist. The reports must note any spills, leaks, or maintenance needs of any of the structures or practices. The reports must also describe action taken to correct or repair deficiencies. Areas of a quarry that have been permanently or temporarily stabilized need only be inspected once per year. Monthly inspections shall continue if the stabilized area is re-disturbed for any reason. Written records of inspections must be kept onsite and made available to the Department upon request.

C. SPECIAL CONDITIONS (continued)

20. Stormwater discharge monitoring is not required of areas stabilized by a durable non-erosive surface, such as hauling roads that are completely covered with gravel. Monitoring or further improvements may be required if Department staff determine that the improvements are not adequate to protect water quality. Storm water monitoring is not required at areas that have been re-vegetated, nor at areas that were never subjected to mining activities. Storm water monitoring is required of storm water runoff from un-vegetated piles of overburden, product stockpiles, soil stockpiles, or other disturbed areas.
21. The permittee shall develop and implement a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP must be prepared and implemented within 90 days of permit issuance. The SWPPP must be kept on-site and should not be sent to DNR unless specifically requested. The SWPPP must be reviewed and updated, if needed, every five (5) years or as site conditions change. The permittee shall select, install, use, operate, and maintain the Best Management Practices prescribed in the SWPPP in accordance with the concepts and methods described in the following document:

Developing Your Stormwater Pollution Prevention Plan, A Guide for Industrial Operators, (Document number EPA 833-B-09-002) published by the United States Environmental Protection Agency (USEPA) in February 2009.

The SWPPP must include the following:

- a. A listing of specific Best Management Practices (BMPs) and a narrative explaining how BMPs will be implemented to control and minimize the amount of potential contaminants that may enter storm water. Minimum BMPs are listed in SPECIAL CONDITIONS #23.
 - b. The SWPPP must include a schedule for twice per month site inspections and brief written reports. The inspections must include observation and evaluation of BMP effectiveness. Deficiencies must be corrected within seven (7) days and the actions taken to correct the deficiencies shall be included with the written report, including photographs. Any corrective measure that necessitates major construction may also need a construction permit. Inspection reports must be kept on site with the SWPPP and maintained for a period of five (5) years. These must be made available to DNR personnel upon request.
 - c. A provision for designating an individual to be responsible for environmental matters.
 - d. A provision for providing training to all personnel involved in material handling and storage, and housekeeping of maintenance and cleaning areas. Proof of training shall be submitted on request of DNR.
22. An individual shall be designated by the permittee as responsible for environmental matters. Staff of the permitted facility shall inspect, on workdays, any structures that function to prevent pollution of storm water or to remove pollutants from storm water and of the facility in general to ensure that any Best Management Practices are continually implemented and effective.
 23. Permittee shall adhere to the following minimum Best Management Practices:
 - a. Prevent the spillage or loss of fluids, oil, grease, fuel, etc. from vehicle maintenance, equipment cleaning, or warehouse activities and thereby prevent the contamination of storm water from these substances.
 - b. Provide collection facilities and arrange for proper disposal of waste products including but not limited to petroleum waste products, and solvents.
 - c. Store all paint, solvents, petroleum products and petroleum waste products (except fuels), and storage containers (such as drums, cans, or cartons) so that these materials are not exposed to storm water or provide other prescribed BMP's such as plastic lids and/or portable spill pans to prevent the commingling of storm water with container contents. Commingled water may not be discharged under this permit. Provide spill prevention control, and/or management sufficient to prevent any spills of these pollutants from entering waters of the state. Any containment system used to implement this requirement shall be constructed of materials compatible with the substances contained and shall also prevent the contamination of groundwater.
 - d. Provide good housekeeping practices on the site to keep trash from entry into waters of the state.
 - e. Provide sediment and erosion control sufficient to prevent or control sediment loss off of the property. This could include the use of straw bales, silt fences, or sediment basins, if needed, to comply with effluent limits.
 24. The purpose of the SWPPP and the BMPs listed herein is the prevention of pollution of waters of the state. A deficiency of a BMP means it was not effective in preventing pollution [10 CSR 20-2.010(56)] of waters of the state, and corrective actions means the facility took steps to eliminate the deficiency.

D. SCHEDULE OF COMPLIANCE -Outfall #011

Since this facility is located within two miles of a stream segment designated for a whole body contact recreational or secondary contact recreational in Table H and G of 10 CSR 20-7.031, it shall not exceed the water quality for E. coli. Counts established in paragraph (4) (C)2 of 10CSR 20-7.031. The following schedule must be met.

1. By **June, 1 2013**, submit an engineering report for providing disinfection to the effluent. Or present an evaluation to show that disinfection is not required to protect the recreational uses.
2. By **Septemper 15, 2013** submit an application for construction permit, including plans and specifications to install disinfection facilities. Or submit an application for permit modification to remove this schedule of compliance and modify final effluent limitations.
3. By **March 1, 2014**, begin construction of disinfection facilities.
4. By **September 15, 2014**, complete construction of disinfection facilities and be in compliance with all final effluent limitations

Missouri Department of Natural Resources
FACT SHEET
FOR THE PURPOSE OF RENEWAL,
OF
MO-0000035
River Cement Co. D/B/A Buzzi Unicem USA, Inc.

The Federal Water Pollution Control Act ("Clean Water Act" Section 402 Public Law 92-500 as amended) established the National Pollution Discharge Elimination System (NPDES) permit program. This program regulates the discharge of pollutants from point sources into the waters of the United States, and the release of storm water from certain point sources. All such discharges are unlawful without a permit (Section 301 of the "Clean Water Act"). After a permit is obtained, a discharge not in compliance with all permit terms and conditions is unlawful. Missouri State Operating Permits (MSOPs) are issued by the Director of the Missouri Department of Natural Resources (Department) under an approved program, operating in accordance with federal and state laws (Federal "Clean Water Act" and "Missouri Clean Water Law" Section 644 as amended). MSOPs are issued for a period of five (5) years unless otherwise specified.

As per [40 CFR Part 124.8(a)] and [10 CSR 20-6.020(1)2.] a Factsheet shall be prepared to give pertinent information regarding the applicable regulations, rationale for the development of effluent limitations and conditions, and the public participation process for the Missouri State Operating Permit (operating permit) listed below.

A Factsheet is not an enforceable part of an operating permit.

This Factsheet is for a Major , Minor , Industrial Facility ; Variance ;
Master General Permit ; General Permit Covered Facility ; and/or permit with widespread public interest .

Part I – Facility Information

Facility Type: Industry (Cement)/Quarry
Facility SIC Code(s): 3241 & 1422

Facility Description:

River Cement Co. D/B/A Buzzi Unicem USA, Inc., located at 1000 River Cement Road, Festus City, Missouri manufactures cement from raw materials that are brought in by barge or rail or quarried at the site. The manufacturing process utilizes a dry process and the facility discharges non-contact cooling water, storm water runoff, and treated sanitary wastewater.

The company withdraws approximately 3.4 million gallons per day (MGD) from the Mississippi River and stores the water in a lake on the property. Approximately 3.3 MGD are used for non-contact cooling water. The company also pumps approximately 13,000 gallons per day (GPD) from a well for potable water use at the plant.

Along with this renewal the facility had requested the addition of outfall #021 to its current permitted outfalls. Outfall #021 discharges stormwater runoff from the retention area of the south quarry road. The total number of all permitted outfalls for this facility is thirteen. Outfalls #001, #002, #007 & #010 are process water discharges from various industrial activities such as non-contact cooling water, screen backwash, mobile equipment washing & compressor condensate. Outfalls #003, #012, #013, #014, #015, #016, #017 & #021 are stormwater runoff discharges from different locations of the plant. Outfall #011 is a sanitary wastewater serving the employees at the plant. The wastewater treatment facility serving the staff of River Cement Company consists of an extended aeration unit with an aerobic digester and the sludge is removed by a contract hauler. Outfall #011 will follow the path of outfall #002 and discharges through that outfall. The design population equivalent for the wastewater treatment facility is 124 with a design flow of 0.02 MGD and actual flow of 0.006 MGD. The following outfalls are inactive # 004, #005, #006, #008, #009, #018, #019 & #020.

The facility is in a process of a modernization which includes installation of a new pre-heated/pre-calciner kiln, in-line raw mill and new finish mill. With the new proposed equipment addition, the facility is proposing to utilize sodium bisulfite to treat the non-contact water to prevent clogging of the heat exchangers. Also, to control biological microbe growth sodium hypochlorite will be utilized as treatment to be added 8 hours a day, 3 times a week. The addition of the sodium hypochlorite may result in increased residual chlorine at the plant outfalls and to treat the anticipated residual chlorine, sodium sulfite will be applied to the effluent.

Chlorine residual was added as monitoring requirements to all stormwater outfalls because chlorine was detected at some of these outfalls. If chlorine is detected in any of these outfalls at or above the daily max of 0.017 mg/L or monthly average of 0.008 mg/L, the facility must install a de-chlorinator unit at these outfalls. Chlorine residual limits were imposed on all outfalls with industrial process wastewater since the facility is planning to utilize sodium sulfite as a de-chlorinator. Also the facility had stated on their renewal application, that they are planning to use a biocide treatment, EVAC (Endothall, mono (N, N-dimethyl)comine) salt, if Zebra mussel infestation becomes a problem.

Outfall #011 is generated from the sanitary wastewater treatment facility serving the employees. Since this facility is located within two miles of a stream segment designated for a whole body contact recreational or secondary contact recreational in Table H and G of 10 CSR 20-7.031. it shall not exceed the water quality for E. coli. Counts established in paragraph (4) (C)2 of 10CSR 20-7.031.

If the facility is utilizing chlorine as the preferred method of disinfection it must de-chlorinate or use other disinfection methods such as ultra-Violet unit but it should be in accordance with the schedule of compliance listed on page 11 of this permit.

Have any changes occurred at this facility or in the receiving water body that effects effluent limit derivation?

- Yes; (Please see facility description above)

Application Date: 02/16/12

Expiration Date: 12/14/11

Last Inspection: 05/17/12

In Compliance ;

Non-Compliance

OUTFALL(S) TABLE:

OUTFALL	DESIGN FLOW (CFS)	TREATMENT LEVEL	EFFLUENT TYPE	DISTANCE TO CLASSIFIED SEGMENT (MI)
#001	6.3427^	BMP^^	Industrial/Non-contact cooling water&Stormwater	0.62
#002	6.3427^	BMP^^	industrial/Non-contact cooling water	0.54
#003	0.0062^	BMP^^	industrial/Screen Backwash	0.51
#007	1.8564^	BMP^^	industrial/Non-contact cooling water&Stormwater	0.69
#010	1.3923^	BMP^^	industrial/Non-contact cooling water&Stormwater	0.10
#011	0.03094	Secondary	Domestic	0.66
#012	Variable	BMP^^	Quarry/Stormwater	0.19
#013	Variable	BMP^^	Quarry/Stormwater	0.11
#014	Variable	BMP^^	Quarry/Stormwater	0.12
#015	Variable	BMP^^	Quarry/Stormwater	0.22
#016	Variable	BMP^^	Quarry/Stormwater & Barge loading	0.37
#017	Variable	BMP^^	Industrial/Stormwater	0.26
#021	Variable	BMP^^	Quarry/Stormwater	0.24

^ These numbers are an estimated flow values.

^^ BMP means Best Management Practices

The following outfalls are inactive # 004, #005, #006, #008, #009, #018, #019 & #020.

Part II – Operator Certification Requirements

As per [10 CSR 20-6.010(8) Terms and Conditions of a Permit], permittees shall operate and maintain facilities to comply with the Missouri Clean Water Law and applicable permit conditions and regulations. Operators or supervisors of operations at regulated wastewater treatment facilities shall be certified in accordance with [10 CSR 20-9.020(2)] and any other applicable state law or regulation. As per [10 CSR 20-9.020(2)(A)], requirements for operation by certified personnel shall apply to all wastewater treatment systems, if applicable, as listed below:

Check boxes below that are applicable to the facility;

- Owned or operated by or for:
 - Municipalities
 - Public Sewer District:
 - County
 - Public Water Supply Districts:
 - Private sewer company regulated by the Public Service Commission:
 - State or Federal agencies:

Not Applicable ;

This facility is not required to have a certified operator.

Part III – Receiving Stream Information

APPLICABLE DESIGNATIONS OF WATERS OF THE STATE:

As per Missouri’s Effluent Regulations [10 CSR 20-7.015], the waters of the state are divided into the below listed seven (7) categories. Each category lists effluent limitations for specific parameters, which are presented in each outfall’s Effluent Limitation Table and further discussed in the Derivation & Discussion of Limits section.

- Missouri or Mississippi River [10 CSR 20-7.015(2)]:
- Lake or Reservoir [10 CSR 20-7.015(3)]:
- Losing [10 CSR 20-7.015(4)]:
- Metropolitan No-Discharge [10 CSR 20-7.015(5)]:
- Special Stream [10 CSR 20-7.015(6)]:
- Subsurface Water [10 CSR 20-7.015(7)]:
- All Other Waters [10 CSR 20-7.015(8)]:

10 CSR 20-7.031 Missouri Water Quality Standards, the Department defines the Clean Water Commission water quality objectives in terms of "water uses to be maintained and the criteria to protect those uses." The receiving stream and/or 1st classified receiving stream’s beneficial water uses to be maintained are located in the Receiving Stream Table located below in accordance with [10 CSR 20-7.031(3)].

RECEIVING STREAM(S) TABLE:

WATERBODY NAME	CLASS	WBID	DESIGNATED USES*	12-DIGIT HUC	EDU**
Cliffdale Hollow Creek	U	NA	General Criteria		
Unnamed Tributary to Mississippi River	U	NA	General Criteria		

* - Irrigation (IRR), Livestock & Wildlife Watering (LWW), Protection of Warm Water Aquatic Life and Human Health-Fish Consumption (AQL), Cool Water Fishery(CLF), Cold Water Fishery (CDF), Whole Body Contact Recreation (WBC), Secondary Contact Recreation (SCR), Drinking Water Supply (DWS), Industrial (IND), Groundwater (GRW).

** - Ecological Drainage Unit

RECEIVING STREAM(S) LOW-FLOW VALUES TABLE:

RECEIVING STREAM (U, C, P)	LOW-FLOW VALUES (CFS)		
	1Q10	7Q10	30Q10
Cliffdale Hollow Creek (U)	0.0	0.0	0.0
Unnamed Tributary to Mississippi River (U)	0.0	0.0	0.0

MIXING CONSIDERATIONS:

Mixing Zone: Not Allowed [10 CSR 20-7.031(4)(A)4.B.(I)(a)].

Zone of Initial Dilution: Not Allowed [10 CSR 20-7.031(4)(A)4.B.(I)(b)].

Part IV – Rationale and Derivation of Effluent Limitations & Permit Conditions

ALTERNATIVE EVALUATIONS FOR NEW FACILITIES:

As per [10 CSR 20-7.015(4)(A)], discharges to losing streams shall be permitted only after other alternatives including land application, discharges to a gaining stream and connection to a regional wastewater treatment facility have been evaluated and determined to be unacceptable for environmental and/or economic reasons.

Not Applicable ;

The facility does not discharge to a Losing Stream as defined by [10 CSR 20-2.010(36)] & [10 CSR 20-7.031(1)(N)], or is an existing facility.

ANTI-BACKSLIDING:

A provision in the Federal Regulations [CWA §303(d)(4); CWA §402(c); 40 CFR Part 122.44(I)] that requires a reissued permit to be as stringent as the previous permit with some exceptions.

- All limits in this operating permit are at least as protective as those previously established; therefore, backsliding does not apply.

ANTIDEGRADATION:

In accordance with Missouri's Water Quality Standard [10 CSR 20-7.031(2)], the Department is to document by means of Antidegradation Review that the use of a water body's available assimilative capacity is justified. Degradation is justified by documenting the socio-economic importance of a discharging activity after determining the necessity of the discharge.

- Renewal no degradation proposed and no further review necessary.

AREA-WIDE WASTE TREATMENT MANAGEMENT & CONTINUING AUTHORITY:

As per [10 CSR 20-6.010(3)(B)], ...An applicant may utilize a lower preference continuing authority by submitting, as part of the application, a statement waiving preferential status from each existing higher preference authority, providing the waiver does not conflict with any area-wide management plan approved under section 208 of the Federal Clean Water Act or any other regional sewage service and treatment plan approved for higher preference authority by the Department.

BIOSOLIDS & SEWAGE SLUDGE:

Biosolids are solid materials resulting from domestic wastewater treatment that meet federal and state criteria for beneficial uses (i.e. fertilizer). Sewage sludge is solids, semi-solids, or liquid residue generated during the treatment of domestic sewage in a treatment works; including but not limited to, domestic septage; scum or solids removed in primary, secondary, or advanced wastewater treatment process; and a material derived from sewage sludge. Sewage sludge does not include ash generated during the firing of sewage sludge in a sewage sludge incinerator or grit and screening generated during preliminary treatment of domestic sewage in a treatment works. Additional information regarding biosolids and sludge is located at the following web address: <http://dnr.mo.gov/env/wpp/pub/index.html>, items WQ422 through WQ449.

- Sludge/biosolids are removed by contract hauler.

COMPLIANCE AND ENFORCEMENT:

Enforcement is the action taken by the Water Protection Program (WPP) to bring an entity into compliance with the Missouri Clean Water Law, its implementing regulations, and/or any terms and conditions of an operating permit. The primary purpose of the enforcement activity in the WPP is to resolve violations and return the entity to compliance.

Not Applicable ;

The permittee/facility is not currently under Water Protection Program enforcement action.

PRETREATMENT PROGRAM:

The reduction of the amount of pollutants, the elimination of pollutants, or the alteration of the nature of pollutant properties in wastewater prior to or in lieu of discharging or otherwise introducing such pollutants into a Publicly Owned Treatment Works [40 CFR Part 403.3(q)].

Pretreatment programs are required at any POTW (or combination of POTW operated by the same authority) and/or municipality with a total design flow greater than 5.0 MGD and receiving industrial wastes that interfere with or pass through the treatment works or are otherwise subject to the pretreatment standards. Pretreatment programs can also be required at POTWs/municipals with a design flow less than 5.0 MGD if needed to prevent interference with operations or pass through.

Several special conditions pertaining to the permittee's pretreatment program may be included in the permit, and are as follows:

- Implementation and enforcement of the program,
- Annual pretreatment report submittal,
- Submittal of list of industrial users,
- Technical evaluation of need to establish local limitations, and
- Submittal of the results of the evaluation

Not Applicable ;

The permittee, at this time, is not required to have a Pretreatment Program or does not have an approved pretreatment program.

REASONABLE POTENTIAL ANALYSIS (RPA):

Federal regulation [40 CFR Part 122.44(d)(1)(i)] requires effluent limitations for all pollutants that are or may be discharged at a level that will cause or have the reasonable potential to cause or contribute to an in-stream excursion above narrative or numeric water quality standard.

In accordance with [40 CFR Part 122.44(d)(iii)] if the permit writer determines that any give pollutant has the reasonable potential to cause, or contribute to an in-stream excursion above the WQS, the permit must contain effluent limits for that pollutant.

Not Applicable ;

A RPA was not conducted for this facility.

REMOVAL EFFICIENCY:

Removal efficiency is a method by which the Federal Regulations define Secondary Treatment and Equivalent to Secondary Treatment, which applies to Biochemical Oxygen Demand 5-day (BOD₅) and Total Suspended Solids (TSS) for Publicly Owned Treatment Works (POTWs)/municipals.

Not Applicable ;

Influent monitoring is not being required to determine percent removal.

SANITARY SEWER OVERFLOWS (SSO) AND INFLOW AND INFILTRATION (I&I):

Sanitary Sewer Overflows (SSOs) are defined as an untreated or partially treated sewage release are considered bypassing under state regulation [10 CSR 20-2.010(11)] and should not be confused with the federal definition of bypass. SSO's have a variety of causes including blockages, line breaks, and sewer defects that allow excess storm water and ground water to (1) enter and overload the collection system, and (2) overload the treatment facility. Additionally, SSO's can be also be caused by lapses in sewer system operation and maintenance, inadequate sewer design and construction, power failures, and vandalism. SSOs also include overflows out of manholes and onto city streets, sidewalks, and other terrestrial locations.

Additionally, Missouri RSMo §644.026.1 mandates that the Department require proper maintenance and operation of treatment facilities and sewer systems and proper disposal of residual waste from all such facilities.

- Not applicable. This facility is not required to develop or implement a program for maintenance and repair of the collection system; however, it is a violation of Missouri State Environmental Laws and Regulations to allow untreated wastewater to discharge to waters of the state.

SCHEDULE OF COMPLIANCE (SOC):

A schedule of remedial measures included in a permit, including an enforceable sequence of interim requirements (actions, operations, or milestone events) leading to compliance with the Missouri Clean Water Law, its implementing regulations, and/or the terms and conditions of an operating permit.

Applicable ;

The time given for effluent limitations of this permit listed under Interim Effluent Limitation and Final Effluent Limitations were established in accordance with [10 CSR 20-7.031(10)]. The schedule of compliance listed on page 11 of the permit applies only to outfall #011

STORM WATER POLLUTION PREVENTION PLAN (SWPPP):

In accordance with 40 CFR 122.44(k) *Best Management Practices (BMPs)* to control or abate the discharge of pollutants when: (1) Authorized under section 304(e) of the Clean Water Act (CWA) for the control of toxic pollutants and hazardous substances from ancillary industrial activities; (2) Authorized under section 402(p) of the CWA for the control of storm water discharges; (3) Numeric effluent limitations are infeasible; or (4) the practices are reasonably necessary to achieve effluent limitations and standards or to carry out the purposes and intent of the CWA.

In accordance with the EPA's *Developing Your Stormwater Pollution Prevention Plan, A Guide for Industrial Operators*, (Document number EPA 833-B-09-002) [published by the United States Environmental Protection Agency (USEPA) in February 2009], BMPs are measures or practices used to reduce the amount of pollution entering (regarding this operating permit) waters of the state. BMPs may take the form of a process, activity, or physical structure.

Additionally in accordance with the Storm Water Management, a SWPPP is a series of steps and activities to (1) identify sources of pollution or contamination, and (2) select and carry out actions which prevent or control the pollution of storm water discharges.

Applicable ;

A SWPPP shall be developed and implemented for each site and shall incorporate required practices identified by the Department with jurisdiction, incorporate erosion control practices specific to site conditions, and provide for maintenance and adherence to the plan.

VARIANCE:

As per the Missouri Clean Water Law § 644.061.4, variances shall be granted for such period of time and under such terms and conditions as shall be specified by the commission in its order. The variance may be extended by affirmative action of the commission. In no event shall the variance be granted for a period of time greater than is reasonably necessary for complying with the Missouri Clean Water Law §§644.006 to 644.141 or any standard, rule or regulation promulgated pursuant to Missouri Clean Water Law §§644.006 to 644.141.

Not Applicable ;

This operating permit is not drafted under premises of a petition for variance.

WASTELOAD ALLOCATIONS (WLA) FOR LIMITS:

As per [10 CSR 20-2.010(78)], the amount of pollutant each discharger is allowed by the Department to release into a given stream after the Department has determined total amount of pollutant that may be discharged into that stream without endangering its water quality.

Applicable ;

Wasteload allocations were calculated where applicable using water quality criteria or water quality model results and the dilution equation below:

$$C = \frac{(C_s \times Q_s) + (C_e \times Q_e)}{(Q_e + Q_s)} \quad (\text{EPA/505/2-90-001, Section 4.5.5})$$

Where C = downstream concentration

Cs = upstream concentration

Qs = upstream flow

Ce = effluent concentration

Qe = effluent flow

Chronic wasteload allocations were determined using applicable chronic water quality criteria (CCC: criteria continuous concentration) and stream volume of flow at the edge of the mixing zone (MZ). Acute wasteload allocations were determined using applicable water quality criteria (CMC: criteria maximum concentration) and stream volume of flow at the edge of the zone of initial dilution (ZID).

Water quality based maximum daily and average monthly effluent limitations were calculated using methods and procedures outlined in USEPA's "Technical Support Document For Water Quality-based Toxics Control" (EPA/505/2-90-001).

Number of Samples "n":

Additionally, in accordance with the TSD for water quality-based permitting, effluent quality is determined by the underlying distribution of daily values, which is determined by the Long Term Average (LTA) associated with a particular Wasteload Allocation (WLA) and by the Coefficient of Variation (CV) of the effluent concentrations. Increasing or decreasing the monitoring frequency does not affect this underlying distribution or treatment performance, which should be, at a minimum, be targeted to comply with the values dictated by the WLA. Therefore, it is recommended that the actual planned frequency of monitoring normally be used to determine the value of "n" for calculating the AML. However, in situations where monitoring frequency is once per month or less, a higher value for "n" must be assumed for AML derivation purposes. Thus, the statistical procedure being employed using an assumed number of samples is "n = 4" at a minimum. For Total Ammonia as Nitrogen, "n = 30" is used.

WLA MODELING:

There are two general types of effluent limitations, technology-based effluent limits (TBELs) and water quality based effluent limits (WQBELs). If TBELs do not provide adequate protection for the receiving waters, then WQBEL must be used.

Not Applicable ;

A WLA study was either not submitted or determined not applicable by Department staff.

WATER QUALITY STANDARDS:

Per [10 CSR 20-7.031(3)], General Criteria shall be applicable to all waters of the state at all times including mixing zones.

Additionally, [40 CFR 122.44(d)(1)] directs the Department to establish in each NPDES permit to include conditions to achieve water quality established under Section 303 of the Clean Water Act, including State narrative criteria for water quality.

WHOLE EFFLUENT TOXICITY (WET) TEST:

A WET test is a quantifiable method of determining if a discharge from a facility may be causing toxicity to aquatic life by itself, in combination with or through synergistic responses when mixed with receiving stream water.

Not Applicable ;

At this time, the permittee is not required to conduct WET test for this facility.

40 CFR 122.41(M) - BYPASSES:

The federal Clean Water Act (CWA), Section 402 prohibits wastewater dischargers from “bypassing” untreated or partially treated sewage (wastewater) beyond the headworks. A bypass, which includes blending, is defined as an intentional diversion of waste streams from any portion of a treatment facility, [40 CFR 122.41(m)(1)(i)]. Additionally, Missouri regulation 10 CSR 20-2.010(11) defines a bypass as the diversion of wastewater from any portion of wastewater treatment facility or sewer system to waters of the state. Only under exceptional and specified limitations do the federal regulations allow for a facility to bypass some or all of the flow from its treatment process. Bypasses are prohibited by the CWA unless a permittee can meet all of the criteria listed in 40 CFR 122.41(m)(4)(i)(A), (B), & (C). Any bypasses from this facility are subject to the reporting required in 40 CFR 122.41(l)(6) and per Missouri’s Standard Conditions I, Section B, part 2.b. Additionally, Anticipated Bypasses include bypasses from peak flow basins or similar devices designed for peak wet weather flows.

- Not Applicable, this facility does not bypass.

303(d) LIST & TOTAL MAXIMUM DAILY LOAD (TMDL):

Section 303(d) of the federal Clean Water Act requires that each state identify waters that are not meeting water quality standards and for which adequate water pollution controls have not been required. Water quality standards protect such beneficial uses of water as whole body contact (such as swimming), maintaining fish and other aquatic life, and providing drinking water for people, livestock and wildlife. The 303(d) list helps state and federal agencies keep track of waters that are impaired but not addressed by normal water pollution control programs.

A TMDL is a calculation of the maximum amount of a given pollutant that a body of water can absorb before its water quality is affected. If a water body is determined to be impaired as listed on the 303(d) list, then a watershed management plan will be developed that shall include the TMDL calculation

Not Applicable ;

This facility does not discharge to a 303(d) listed stream.

Part V – Effluent Limits Determination

Outfalls #001,#002, #007 & #010

PARAMETER	UNIT	BASIS FOR LIMITS	DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MODIFIED	PREVIOUS PERMIT LIMITATIONS
FLOW	MGD	1	*		*	NO	*
TEMPERATURE	°F	1	90°		90°	YES	MONITORING ONLY
OIL & GREASE	MG/L	1,3	15		10	NO	SAME
TOTAL SUSPENDED SOLIDS	MG/L	9	80		60	YES	**
pH	SU	3	6.5-9.0		6.5-9.0	YES	6.0-9.0
TOTAL RESIDUAL CHLORINE	uG/L	1,3	17.0		8.0	YES	**
Endothall, Mono(N,N-dimethylecocoamine)salt	MG/L	9	*		*	YES	**

* - Monitoring requirement only.

. ** - Parameter not previously established in previous state operating permit.

Basis for Limitations Codes:

- | | |
|------------------------------------------|------------------------------------|
| 1. State or Federal Regulation/Law | 7. Antidegradation Policy |
| 2. Water Quality Standard (includes RPA) | 8. Water Quality Model |
| 3. Water Quality Based Effluent Limits | 9. Best Professional Judgment |
| 4. Lagoon Policy | 10. TMDL or Permit in lieu of TMDL |
| 5. Ammonia Policy | 11. WET Test Policy |
| 6. Antidegradation Review | |

OUTFALLS #001, #002, #007 & #010 – DERIVATION AND DISCUSSION OF LIMITS:

- **Flow.** In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the Department, which may require the submittal of an operating permit modification.
- **Temperature.** Condition retained from the previous permit “The effluent shall not elevate or lower temperature of the receiving stream more than 5 °F. The receiving stream temperature shall not exceed 90 °F due to the effluent. Stream temperatures 100 foot above and 100 foot below each outfall shall be reported.” A review of data from the previous permit cycle showed no stream measurements over 90°F and no changes in stream temperature exceeding 5°F.
- **Oil & Grease.** In accordance with [10 CSR 20-7.031 (Table A)], conventional pollutant, effluent limitation for protection of aquatic life; 10 mg/L monthly average, 15 mg/L daily maximum.
- **Total Suspended Solids (TSS).** Effluent limitations of 80 mg/L daily maximum and 60 mg/L monthly average have been retained from previous state operating permit. These limits are protective of water quality, and are achievable by the facility as demonstrated in their 5-year discharge monitoring report and expanded effluent testing.
- **pH.** Water contaminants shall not cause the pH to be outside the range of 6.5-9.0 standard pH units
- **Total Residual Chlorine (TRC).** Warm-water Protection of Aquatic Life CCC = 10 µg/L, CMC = 19 µg/L [10 CSR 20-7.031, Table A]. Background TRC = 0.0 µg/L.

Chronic WLA: $C_e = ((6.3427 + 0.0)10 - (0.0 * 0.0))/6.3427$
 $C_e = 10 \mu\text{g/L}$

Acute WLA: $C_e = ((6.3427 + 0.0)19 - (0.0 * 0.0))/6.3427$
 $C_e = 19 \mu\text{g/L}$

$LTA_c = 10 (0.527) = 5.3 \mu\text{g/L}$
 $LTA_a = 19 (0.321) = 6.1 \mu\text{g/L}$

[CV = 0.6, 99th Percentile]
 [CV = 0.6, 99th Percentile]

Use most protective number of LTA_c or LTA_a .

$MDL = 5.3 (3.11) = 16.5 \mu\text{g/L}$
 $AML = 5.3 (1.55) = 8.2 \mu\text{g/L}$

[CV = 0.6, 99th Percentile]
 [CV = 0.6, 95th Percentile, n = 4]

Total Residual Chlorine effluent limits of **0.017 mg/L** daily maximum, **0.008 mg/L** monthly average are recommended if chlorine is used as a disinfectant.

- **Endothall, Mono(N,N-dimethylecocoamine)salt.** The facility must monitor for the VAC Biocide which also known as Endothall every time it utilizes it as treatment to the Zebra Mussel infestation.

Outfalls #003, #012, #013, #014, #015, #016, #017 & #021- DERIVATION AND DISCUSSION OF LIMITS:

PARAMETER	UNIT	BASIS FOR LIMITS	DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MODIFIED	PREVIOUS PERMIT LIMITATIONS
FLOW	MGD	1	*		*	NO	*
TOTAL SUSPENDED SOLIDS	MG/L	9	80		60	YES	**
Settleable Solids	MI/L/hr	9	1.5		1.0	NO	SAME
OIL & GREASE	MG/L	1,3	15		10	YES	SAME
pH	SU	3	6.5-9.0		6.5-9.0	YES	6.0-9.0
TOTAL RESIDUAL CHLORINE	UG/L	1,3	*		*	YES	**

* - Monitoring requirement only.

** - Parameter not previously established in previous state operating permit.

Basis for Limitations Codes:

- | | |
|------------------------------------------|------------------------------------|
| 1. State or Federal Regulation/Law | 7. Antidegradation Policy |
| 2. Water Quality Standard (includes RPA) | 8. Water Quality Model |
| 3. Water Quality Based Effluent Limits | 9. Best Professional Judgment |
| 4. Lagoon Policy | 10. TMDL or Permit in lieu of TMDL |
| 5. Ammonia Policy | 11. WET Test Policy |
| 6. Antidegradation Review | |

OUTFALLS #001, #002, #007 & #010 – DERIVATION AND DISCUSSION OF LIMITS:

- **Flow.** In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the Department, which may require the submittal of an operating permit modification.
- **Total Suspended Solids (TSS).** Effluent limitations of 80 mg/L daily maximum and 60 mg/L monthly average have been retained from previous state operating permit. These limits are protective of water quality, and are achievable by the facility as demonstrated in their 5-year discharge monitoring report and expanded effluent testing.
- **Settleable Solids.** Effluent limitations of 1.5 mL/L/hr daily maximum and 1.0 mL/L/hr monthly average have been retained from previous state operating permit. These limits are protective of water quality, and are attainable by the facility as shown in their 5-year discharge monitoring report.
- **Oil & Grease.** In accordance with [10 CSR 20-7.031 (Table A)], conventional pollutant, effluent limitation for protection of aquatic life; 10 mg/L monthly average, 15 mg/L daily maximum.
- **pH.** Water contaminants shall not cause the pH to be outside the range of 6.5-9.0 standard pH units

Total Residual Chlorine (TRC). Monitoring only, twice a year. the facility is proposing to utilize Sodium Bisulfite to treat the non-contact water to prevent clogging of the heat exchangers, also to control biological microbe growth Sodium Hypochlorite will be utilized as treatment to be added 8 hours a day, 3 times a week and to treat the anticipated residual chlorine. .

EFFLUENT LIMITATIONS TABLE: *Outfall #011*

PARAMETER	UNIT	BASIS FOR LIMITS	DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MODIFIED	PREVIOUS PERMIT LIMITATIONS
FLOW	MGD	1	*		*	NO	SAME
Biochemical Oxygen Demand ₅	MG/L	9		45	30	NO	SAME
TOTAL SUSPENDED SOLIDS	MG/L	9		45	30	NO	SAME
E-COLI	#100/ML	1,3	1030		206	YES	**
TOTAL RESIDUAL CHLORINE	uG/L	1,3	17.0(ML)		8.00(ML)	NEW	**
pH	SU	1,3	6.5-9.0		6.5-9.0	NEW	6.0-9.0
Ammonia as N (April 1 – Sept 30) (Oct 1 – March 31)	MG/L		3.7 7.5		1.4 2.8	YES	**

* - Monitoring requirement only.

. ** - Parameter not previously established in previous state operating permit.

Basis for Limitations Codes:

- | | |
|------------------------------------------|------------------------------------|
| 7. State or Federal Regulation/Law | 7. Antidegradation Policy |
| 8. Water Quality Standard (includes RPA) | 8. Water Quality Model |
| 9. Water Quality Based Effluent Limits | 9. Best Professional Judgment |
| 10. Lagoon Policy | 10. TMDL or Permit in lieu of TMDL |
| 11. Ammonia Policy | 11. WET Test Policy |
| 12. Antidegradation Review | |

OUTFALL #011 – DERIVATION AND DISCUSSION OF LIMITS

- **Flow.** In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the Department, which may require the submittal of an operating permit modification.
- **Biochemical Oxygen Demand (BOD₅).** Effluent limitations from the previous state operating permit have been reassessed and verified that they are still protective of the receiving stream’s Water Quality. Therefore, effluent limitations have been retained from previous state operating permit, please see the **APPLICABLE DESIGNATION OF WATERS OF THE STATE** sub-section of the **Receiving Stream Information.**

- **Total Suspended Solids (TSS).** Effluent limitations from the previous state operating permit have been reassessed and verified that they are still protective of the receiving stream's Water Quality. Therefore, effluent limitations have been retained from previous state operating permit, please see the **APPLICABLE DESIGNATION OF WATERS OF THE STATE** sub-section of the **Receiving Stream Information**.
- **Escherichia coli (E. coli).** Monthly average of 206 per 100 ml as a geometric mean and Daily Maximum of 1030 during the recreational season (April 1 – October 31), to protect Whole Body Contact Recreation (A) or (B) designated use of the receiving stream, as per 10 CSR 20-7.031(4)(C).
- **Total Residual Chlorine (TRC).** Warm-water Protection of Aquatic Life CCC = 10 µg/L, CMC = 19 µg/L [10 CSR 20-7.031, Table A]. Background TRC = 0.0 µg/L.

Chronic WLA: $C_e = ((0.0309 \text{ cfs} + 0) 10 \mu\text{g/L} - (0 * 0.0))/0.0309 \text{ cfs}$
 $C_e = 10 \mu\text{g/L}$

Acute WLA: $C_e = ((0.0309 \text{ cfs} + 0) 19 \mu\text{g/L} - (0 * 0.0))/0.0309 \text{ cfs}$
 $C_e = 19 \mu\text{g/L}$

$LTA_c = 10 \mu\text{g/L} (0.527) = 5.27 \mu\text{g/L}$ [CV = 0.6, 99th Percentile]

$LTA_a = 19 \mu\text{g/L} (0.321) = 6.099 \mu\text{g/L}$ [CV = 0.6, 99th Percentile]

Use most protective number of LTA_c or LTA_a .

MDL = 5.27 µg/L (3.11) = 16.39 µg/L [CV = 0.6, 99th Percentile]

AML = 5.27 µg/L (1.55) = 8.17 µg/L [CV = 0.6, 95th Percentile, n = 4]

The effluent limits for TRC based on the Waste Load Allocation are **16.39 µg/L** daily maximum and **8.17 µg/L** monthly average.

- **pH.** pH shall be maintained in the range from 6.5-9.0 standard units in accordance with 10 CSR 20-7.015(8)A(2).
- **Total Ammonia Nitrogen.** Early Life Stages Present Total Ammonia Nitrogen criteria apply [10 CSR 20-7.031(4)(B)7.C. & Table B3] default pH 7.8 SU Background total ammonia nitrogen = 0.01 mg/L (Default). OR No mixing considerations allowed; therefore, WLA = appropriate criterion.

Season	Temp (°C)	pH (SU)	Total Ammonia Nitrogen CCC (mg/L)	Total Ammonia Nitrogen CMC (mg/L)
Summer	26	7.8	1.5	12.1
Winter	6	7.8	3.1	12.1

Summer: April 1 – September 30

Chronic WLA: $C_e = ((0.0309 + 0.0)1.5 - (0.0 * 0.01))/0.0309$
 $C_e = 1.5 \text{ mg/L}$

Acute WLA: $C_e = ((0.0309 + 0.0)12.1 - (0.0 * 0.01))/0.0309$
 $C_e = 12.1 \text{ mg/L}$

$LTA_c = 1.5 \text{ mg/L} (0.780) = \mathbf{1.2 \text{ mg/L}}$ [CV = 0.6, 99th Percentile, 30 day avg.]

$LTA_a = 12.1 \text{ mg/L} (0.321) = 3.9 \text{ mg/L}$ [CV = 0.6, 99th Percentile]

Use most protective number of LTA_c or LTA_a .

MDL = 1.2 mg/L (3.11) = **3.7 mg/L** [CV = 0.6, 99th Percentile]

AML = 1.2 mg/L (1.19) = **1.4 mg/L** [CV = 0.6, 95th Percentile, n = 30]

Winter: October 1 – March 31

Chronic WLA: $C_e = ((0.0309 + 0.0)3.1 - (0.0 * 0.01))/0.0309$
 $C_e = 3.1 \text{ mg/L}$

Acute WLA: $C_e = ((0.0309 + 0.0)12.1 - (0.0 * 0.01))/0.0309$
 $C_e = 12.1 \text{ mg/L}$

$LTA_c = 3.1 \text{ mg/L} (0.780) = \mathbf{2.4 \text{ mg/L}}$ [CV = 0.6, 99th Percentile, 30 day avg.]

$LTA_a = 12.1 \text{ mg/L} (0.321) = 3.9 \text{ mg/L}$ [CV = 0.6, 99th Percentile]

Use most protective number of LTA_c or LTA_a .

MDL = 2.4 mg/L (3.11) = **7.5 mg/L** [CV = 0.6, 99th Percentile]

AML = 2.4 mg/L (1.19) = **2.8 mg/L** [CV = 0.6, 95th Percentile, n = 30]

Part VI – Finding of Affordability

Pursuant to Section 644.145, RSMo., the Department is required to determine whether a permit or decision is affordable and makes a finding of affordability for certain permitting and enforcement decisions. This requirement applies to discharges from combined or separate sanitary sewer systems or publically-owned treatment works.

Not Applicable;

The Department is not required to determine findings of affordability because the facility is not a **combined or separate sanitary sewer system for a publically-owned treatment works**.

Part VII – Administrative Requirements

On the basis of preliminary staff review and the application of applicable standards and regulations, the Department, as administrative agent for the Missouri Clean Water Commission, proposes to issue a permit(s) subject to certain effluent limitations, schedules, and special conditions contained herein and within the operating permit. The proposed determinations are tentative pending public comment.

PERMIT SYNCHRONIZATION:

The Missouri Department of Natural Resources is transitioning from the traditional methods with which Missouri's water resources have been managed to a Watershed Based Management (WBM) approach. The WBM approach will manage watersheds on the eight-digit Hydrological Unit Code (HUC8) scale. As permitting and permit synchronization is a key aspect of successful implementation of a Watershed Management Plan (WMP), the same HUC8 groups that will move through the WBM cycle will have their permit expirations and issuances synchronized in the same fiscal year. The typical five-year term of the permit issuances aligns with the proposed five-year WBM cycle and the two processes will be intimately tied together.

The immediate goals of the permit synchronization include the following:

- The administrative and technical streamlining of Water Protection Program and Regional Office activities such as permitting, inspections, and water quality monitoring.
- Providing the basis for future watershed permitting.
- Beginning to further examine Missouri's water resources on a watershed basis.

This permit will expire on **June 30, 2017** in order to meet the permit synchronization goals.

PUBLIC NOTICE:

The Department shall give public notice that a draft permit has been prepared and its issuance is pending. Additionally, public notice will be issued if a public hearing is to be held because of a significant degree of interest in and water quality concerns related to a draft permit. No public notice is required when a request for a permit modification or termination is denied; however, the requester and permittee must be notified of the denial in writing.

The Department must issue public notice of a pending operating permit or of a new or reissued statewide general permit. The public comment period is the length of time not less than 30 days following the date of the public notice which interested persons may submit written comments about the proposed permit.

For persons wanting to submit comments regarding this proposed operating permit, then please refer to the Public Notice page located at the front of this draft operating permit. The Public Notice page gives direction on how and where to submit appropriate comments.

- The Public Notice period for this operating permit was from 12/7/2012 to 1/7/2013. Responses to the Public Notice of this operating permit warrant a minor modification of effluent limits and/or the terms and conditions of this permit. Instead of quarterly monitoring for Total Residual Chlorine it changed to semiannual monitoring.

DATE OF FACT SHEET: AUGUST 21, 2012

COMPLETED BY:

Thabit. H. Hamoud, P.E., EE III

Missouri Department of Natural Resources

Water Protection Section

7545 S. Lindbergh, Suite 210, St. Louis, Missouri 63125

(314) 416-2453

thabit.hamoud@dnr.mo.gov